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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/374,502 08/13/99 MA

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EXAMINER

FENTY, J

ART UNIT

PAPER NUMBER

2815

DATE MAILED:
02/20/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/374,502

Applicant(s)

MA ET AL.

Examiner

Jesse A Fenty

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 25-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-24 in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 25-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No. 7.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3, 5-7, 9, 10 and 15-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. In re claims 3 and 9, the limitation, "low-modulus" is vague and indefinite, not clearly defining the material of the structure of the invention.

6. In re claims 5, 15 and 20, the limitation, "aspect ratio" is vague and indefinite.

7. In re claim 10, the limitation, "high-modulus" is vague and indefinite.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

9. Claims 1-4 and 8-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Wong et al. (U.S. Patent No. 6,083,797).

In re claim 1, Wong (Fig. 2D) discloses a semiconductor device, comprising:

An active area formed in a semiconductor substrate; and

An isolation structure (12) comprising at least one dielectric material disposed within a trench which extends into said semiconductor substrate, wherein said isolation structure substantially surrounds said active area.

The limitation, “wherein at least ... is adapted to ... area” is a recitation of the intended use of the claimed invention. Terms that simply set forth the intended use, a property inherent in or a function, do not differentiate the claimed composition of these elements from those known to prior art.

In re claim 2, Wong discloses the device of claim 1, wherein said active area further comprises an NMOS transistor.

In re claim 3, as best understood, Wong discloses the device of claim 2, wherein said isolation structure comprises a low-modulus, dielectric material disposed within said at least a portion of said trench.

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In re claim 4, Wong discloses the device of claim 2, wherein said isolation structure comprises a tensile stress-inducing, dielectric material (column 4, lines 46-49, 58-60) disposed within said at least a portion of said trench.

In re claim 8, Wong discloses the device of claim 1, wherein said active area further comprises an PMOS transistor.

In re claim 9, as best understood, Wong discloses the device of claim 8, wherein said isolation structure comprises a low-modulus, dielectric material disposed within said at least a portion of said trench parallel to a channel current direction of the PMOS device components.

In re claim 10, as best understood, Wong discloses the device of claim 9, wherein said isolation structure comprises a high-modulus, dielectric material disposed within said at least a portion of said trench perpendicular to the channel current direction of the PMOS device components.

In re claim 11, as best understood, Wong discloses the device of claim 8, wherein said isolation structure comprises a low-modulus, dielectric material disposed within said at least a portion of said trench perpendicular to a channel current direction of the PMOS device components.

In re claim 12, as best understood, Wong discloses the device of claim 11, wherein said isolation structure comprises a high-modulus, dielectric material disposed within said at least a portion of said trench parallel to the channel current direction of the PMOS device components.

In re claim 13, Wong discloses the device of claim 8, wherein said isolation structure comprises a tensile stress-inducing, dielectric material disposed within said at least a portion of said trench parallel to the channel current direction of the PMOS device components.

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In re claim 14, Wong discloses the device of claim 8, wherein said isolation structure comprises a compressive stress-inducing, dielectric material disposed within said at least a portion of said trench parallel to the channel current direction of the PMOS device components.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Puchner et al. (U.S. Patent No. 6,144,076) discloses a CMOS device comprising silicon dioxide isolation structure and Noda (U.S. Patent No. 6,175,138 B1) discloses a CMOS device comprising isolation structures.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse A Fenty whose telephone number is 703-308-8137. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JAF
February 15, 2001

Jesse A Fenty
Examiner
Art Unit 2815


EDDIE C. LEE
PRIMARY EXAMINER